Colorado River Storage Project
Flaming Gorge Working Group
Meeting Minutes
August 23, 2011

Participation

This meeting was held at Western Park, Vernal, Utah. Attendees are listed below.

Purpose of Meeting

The purpose of operation meetings (held in April and August) is to inform the public and other interested parties of Reclamation's current and future operational plans and to gather information from the public regarding specific resources associated with Flaming Gorge Reservoir. In addition, the meetings are used to coordinate activities and exchange information among agencies, water users, and other interested parties concerning the Green River.

General

Ed Vidmar welcomed everyone to the fall meeting of the Flaming Gorge Working Group. Everyone introduced themselves and who they represented. Ed turned the meeting over to Heather Hermansen to explain last spring's hydrology and what the operational plans are for Flaming Gorge Dam for the fall and winter of 2011, and the spring of 2012.

Flaming Gorge Hydrology and Operations Presentation

Flaming Gorge operations balance the objectives of all the affected parties while still meeting the objectives of the 2006 Record of Decision (ROD) that implements, to the extent possible, the Upper Colorado River Endangered Fish Recovery Program 2000, Muth et al, Flow and Temperature Recommendations for Endangered Fishes in the Green River Downstream of Flaming Gorge Dam (flow recommendations). The flow recommendations divide the Green River below Flaming Gorge Dam into three reaches. Reach 1 begins directly below the dam and extends to the confluence of the Green and Yampa Rivers. Reach 2 begins at the confluence of the Green and Yampa Rivers and extends to the confluence of the Green and White Rivers. Reach 3 begins at the end of Reach 2 and extends to the confluence of the Green and Colorado Rivers. The flow recommendations use five different categories to classify the type of water year and release patterns associated with that hydrology.

Flaming Gorge releases under the flow recommendations are increased to coincide with the immediate peak and post-peak of the Yampa River spring peak flows. Releases are targeted and measured in Reach 2 at the Green River at Jensen, Utah USGS streamgage (Jensen streamgage). Because of the wet year, Flaming Gorge Dam releases were based on evacuating storage in anticipation of inflows, maintaining dam safety and, to the extent possible, reducing high flows downstream below the Green and Yampa River confluence.

Flaming Gorge reservoir saw 162% of average inflow this past April through July period. The Yampa was 207% of average. Snowpack totals throughout the upper Green and Yampa River basins set records in terms of snow water equivalent (SWE). The April through July volume of the Yampa river was the highest volume on record beginning in 1922. Flaming Gorge inflow was the 4th highest volume on record beginning in 1959. Weather conditions during spring runoff

alternated between warm and cool temperatures which were ideal for melting such a large snowpack without generating significant flooding downstream of the Yampa River confluence. SWE continued to accumulate through April and into May in both the Upper Green and Yampa River basins. Flaming Gorge was undergoing annual maintenance during April and had two of three generating units available. Releases were increased to full powerplant capacity with two units the first week of April. The third unit was placed back in service toward the end of April and releases were increased to full powerplant capacity with all units.

Releases from Flaming Gorge were increased to powerplant capacity and full bypass releases in early May for about a week to evacuate storage in anticipation of large spring runoff conditions into Flaming Gorge. The Yampa River spring peak flows started in mid-May and releases were decreased to full power plant capacity until early June. Releases were again increased to powerplant capacity and full bypass in early June after the Yampa River peak occurred and reservoir storage continued increasing,. These releases were maintained for about four weeks and then decreased to powerplant capacity.

Snowpack was greater in 2011 than 1984, a record peak year, and the Yampa River peak flows could have been much higher given different weather conditions. Yampa River flows with 2011 weather conditions were compared with weather conditions in 1984 when warm temperatures increased and remained hot, thus producing record peak flows on the Yampa River.
Releases during the base flow period are evaluated to produce less than a 0.1 meter stage change at the Jensen streamgage from hydropower fluctuations. Yampa River flows effect the range of hourly release fluctuations from Flaming Gorge Dam. When Yampa River flows are higher, hourly release fluctuations have less impact to stage change as measured at the Jensen streamgage. As Yampa River flow decreases, the same hourly release fluctuations have a greater impact to stage change.

The current condition of Flaming Gorge reservoir is 95% of live storage capacity. The current elevation is 6035.39 feet. The average inflow has been 1,400 cubic feet per second (cfs), and the average release has been 2,450 cfs. The reservoir is higher than average for this time of year because of the higher than average inflows into the Reservoir. The Flaming Gorge Dam daily average release during the base flow season is determined with the forecasted unregulated inflow volume into Flaming Gorge Dam over the winter and subsequent spring period. Release volumes are based on forecasted inflow and reaching a reservoir elevation of 6027 feet by May 1 of the next year. Projected elevations of the reservoir will fall within a range based on the maximum (90th percentile), median (50th percentile), and minimum (10th percentile) forecasted unregulated inflow volumes.

September 12th and 13th is the planned electrofishing by DWR and the flows will be 1,600 cfs during that time.

Western Area Power Administration Base Flow Proposal

Lyle Johnson with Western Area Power Administration presented the operational release patterns that can be expected this fall and winter. Hydropower is well suited to load following generation. The minimum probable scenario has 1650 cfs base flows with 2462 cfs in the morning hours then cutting back to 1650 for the middle of the day, and then to going to 3124 cfs in the evening hours before returning late in the evening to 1650 cfs.

The most probable scenario has 1650 cfs base flows with 2462 cfs in the morning hours then cutting back to 1800 for the middle of the day, and then to going to 3154 cfs in the evening hours before returning late in the evening to 1650 cfs.

The maximum probable scenario has 2300 cfs base flows with 3508 cfs in the morning hours then cutting back to 2400 for the middle of the day, and then to going to 3639 cfs in the evening hours before returning late in the evening to 2300 cfs.

Kevin Clegg with the Green River Outfitters Guide Association (GROGA) went on record requesting decreased fluctuations during the weekend flow pattern. Melissa indicated her customers do not like the double peaking patterns. Mr. Dickinson commented that he prefers stable flows in the Browns Park area.

Upper Green and Yampa River 2011 Forecast Review

Upper Colorado Recovery Implementation Program Presentation August 2011

Ashley Neilson with the Colorado Basin River Forecast Center recapped spring 2011 from a River Forecast Center's perspective. The winter and spring 2011 were very wet and cold. The spring had 92 days below normal temperatures from April through July. Snowmelt was delayed by a month or more.

The upper Green River basin had average SWE up until mid-March when above-average snow began accumulating through May. Snotel sites represented with black squares had record SWE in 2011. Water years 1986 and 1997 were larger overall snowpack than 2011. The Yampa River basin snowpack was similar to the upper Green with average accumulation transforming to above-average in March, along with record setting snowpack. Runoff in the Green and Yampa was higher and later than average and significantly different than 2010. There was discussion on lack of snotel information in the high elevations of the Wind River Mountains and north slope of the Uintah Mountains that drain into Flaming Gorge Reservoir.

The Green River observed the 4th highest April-July volume in the period of record and the highest July volume on record. The Yampa River observed a new record for the April-July volume in 2011. Yampa River peak flows were tempered by the alternating warm and cool weather conditions mentioned previously. The 10 day Yampa River at Maybell and Green River at Jensen forecasts over the season were compared against the observed.

The projected inflows into Flaming Gorge for September, October, and November are all above normal.

Upper Colorado River Endangered Fish Recovery Program

Recovery Program - Reclamation

Dave Speas, Reclamation Fish Biologist, presented what the Recovery Program activities were during the spring 2011. There was aerial photography of the peak flows in reach 1 and 2. The June 9th Jensen flows were just over 30,000 cfs when the aerial photography was taken. There was aerial photography taken in Reach 1 on July 9th at 8,883 cfs. The Thunder Ranch levee breach was photographed also.

Data for Reach 1 will be geo-rectified for flow elevations. Hopefully, Reach 2 information can also be corrected.

Recovery Program – USFWS

Aaron Webber, U.S. Fish and Wildlife Service (Service) Fish Biologist, discussed the efforts of the Service to document razorback sucker larvae spawning and recruitment this past spring. The Service sampled ten river bottoms for razorback sucker larvae. Three out of the ten river bottoms had confirmed larvae present.

The Stirrup is used to document the movement patterns of the larvae into and out of the wetlands. Utah Division of Wildlife Resources manages this effort. They are trying to understand why and how the fish move into and out of the wetlands.
Aaron talked about their efforts the Service took in the White River related to razorback suckers.

Discussion and Next Meeting

There was a lot of discussion about FG release patterns being modified to accommodate the Recovery Programs requests in the future to provide the peak flow patterns in correlation with larval drift rather than the peaking flows of the Yampa. It was indicated that discussions will occur within Reclamation and the cooperating agencies in relation to this issue.

There was also discussion related to the lack of Snotel information and how Utah and Wyoming representatives can assist in the development of the Snotel program in each state where data has been lacking.

Mr. Dickinson commented that he undergoes a lot of river bank damage when the flows out of the Gorge go above 6,600 cfs. He commented he is in favor of the Recovery Program, but when flows go to full bypass, that is unacceptable to him.
The next meeting of the Work Group will be April 18th, 2012 at 1 pm at the Western Park Convention Center in Vernal.

Presentations

Colorado Basin River Forecast Center Presentation August 2011
http://www.usbr.gov/uc/water/crsp/wg/fg/pdfs/RFC_flamingorge meeting 08 23 11.pdf
Reclamation Hydrology Presentation August 2011
http://www.usbr.gov/uc/water/crsp/wg/fg/pdfs/FlamingGorgeWorkGroup_Aug11.pdf

Attendees

Name	Representing
Heather Hermansen	Reclamation
Ed Vidmar	Reclamation
Jerry Taylor	Lucerne Valley Marina
Tamara Naumann	NPS – Dinosaur Nat'l Monument
Kevin Clegg	GROGA & Flaming Gorge Resort
Charles Card	Trout Unlimited
Robert Keith	Wyoming Game and Fish
T. Wright Dickinson	Vermillion Ranch
Cris Dipple	USFWS – Lower Green River NWR Ouray
Ashley Nielson	CBRFC – National Weather Service
Kevin McAbee	US Fish & Wildlife – Utah Ecological Services
Dan Schaad	USFWS – Lower Green River NWR Ouray
Aaron Webber	USFWS Vernal CRFP
Boyd Kitchen	Utah State University
Gawain Snow	Uintah Water Conservancy District
E. Tal Ehlers	Uintah Emergency Manager
Matt Breen	Utah Division of Wildlife Resources
Trina Hedrick	Utah Division of Wildlife Resources
Michelle Miller	DPS-DEM
Martin Wilson	DPS-DEM
Yankton Johnson	Moon Lake Electric
Alan Haslem	Moon Lake Electric
Lyle Johnson	Western Area Power Administration
Tim Vigil	Western Area Power Administration
Jeff Ackerman	Western Area Power Administration

Previous Meeting Minutes
Flaming Gorge Working Group Meeting Minutes:
April 26, 2011
August 26, 2010
April 27, 2010
August 26, 2009
April 15, 2009
August 20, 2008
April 16, 2008

August 23, 2007
April 19, 2007
August 22, 2006
April 13, 2006
November 2, 2005
October 28, 2005
August 25, 2005
April 20, 2005
August 19, 2004
April 15, 2004